FAST DIAGONAL INTERLEAVED PARITY (DIP) CALCULATOR

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5   ABSTRACT

A method of calculating a diagonal interleaved parity word for groups of words sampled from a bus is provided, wherein a predetermined number of words are included in each sampling cycle. The bus carries successive data words that are followed by a control word. At each sampling cycle, diagonal XOR

10   calculations chains are propagated through the words that were sampled. However, if a sampling cycle includes the control word, the words following the control word are assigned to logical zero values. The diagonal XOR calculation chains may then be terminated after processing the words in this sampling cycle to derive an intermediate diagonal parity word. The intermediate diagonal parity

15   word may then be adjusted according to the number of words that were assigned logical zero values to calculate the diagonal interleaved parity word.